

Guidelines for Field Collection Methods & Specimen Preparation

The Department of Game and Inland Fisheries (DGIF) would like to make the following recommendations concerning the ethical collection of Virginia fauna. **Please try to utilize photographic documentation whenever possible instead of taking voucher specimens.** In addition, exercise discretion in your activities by obtaining permission to collect on private property. Also, collectors must observe all legal restrictions (local, state and federal) in their collecting activities and carry applicable permits at all times. Use methods that minimize environmental impacts.

Acquisition and possession of specimens must be in accord with federal, state, and international regulations. A collector should be able to present documentation that shows adherence to such regulations. This includes possession of live animals held for longer than 48 hours.

Voucher specimens should be housed in Virginia institutions that have the ability to provide appropriate care of the specimens and that have at least one professional scientist or collections manager directly responsible for them. In addition, the institution should intend to maintain the collection at standards outlined by museum institutional guidelines.

If specimens must be euthanized, use only humane methods [as outlined by the American Veterinary Medical Association](#).

For information on permits, to download a permits application, or to download a report form, go [here](#). Contact Shirl Dressler, (804) 367-6913 or email CollectionPermits@dgif.virginia.gov if you have questions that cannot be answered via the website.

The following are websites and references that you can consult for guidance in collecting and preparing your specimens. The DGIF biologist(s) who is the contact for each taxonomic group is identified in the heading below.

GENERAL WEBSITES OF INTEREST:

- [World Wide Web Virtual Library Veterinary Medicine](#)
- [CCAC Guide to Care and Use of Animals \(Vols. 1&2\)](#)
- [General field identification \(enature.com\)](#)
- [Virginia Fish and Wildlife Information Service](#)

INVERTEBRATES: BRIAN WATSON

- [North American freshwater mussels](#)
- [Major reference sources for butterflies](#)
- Arnett, R.H. Jr. 1993 American Insects. A Handbook of the Insects of America North of Mexico. The Sandhill Crane Press. Gainesville, FL, 850 pp.

- Parmalee, P.W. and Bogan, A.E. 1998. The Freshwater Mussels of Tennessee. The University of Tennessee Press, Knoxville, TN. 328 pp.
- Voshell, J.R., Jr. 2002. A Guide to Common Freshwater Invertebrates of North America. The McDonald & Woodward Publishing Company. Blacksburg, VA. 442 pp.

REPTILES & AMPHIBIANS: JOHN KLEOPFER

- [Care and use guide for herps](#)
- ASIH, HL and SSAR. 2001. Guidelines for Use of Live Amphibians and Reptiles in Field Research. Online document: www.asih.org/pubs/herpcoll.html. October 1, 2002, 13 pp.
- McDiarmid, R.W. 1994. Preparing amphibians as scientific specimens. Pages 289-296 in Heyer, R.W., Donnelly, M.A., McDiarmid, R.W., Hayek, L.C., and M.S. Foster. Measuring and Monitoring Biological Diversity: Standard Methods for Amphibians. Smithsonian Institution Press, Washington D.C.
- Pisani, G.R. 1973. A guide to preservation techniques for amphibians and reptiles. SSAR Herpetological Circulars No. 16, 70 pp.

SEA TURTLES & MARINE MAMMALS: RUTH BOETTCHER

- Geraci, J.R., and V.J. Lounsbury. 1993. Marine Mammals Ashore: A Field Guide for Strandings. Texas A&M University Sea Grant College Publication TAMU-SG-93-601. Galveston, TX. 305 pp.
- Wyneken, J. 2001. The Anatomy of Sea Turtles. U.S. Department of Commerce NOAA Technical Memorandum NMFS-SEFSC-470. 172 pp.

MAMMALS: RICK REYNOLDS

- [Care and use guide for mammals](#) a
- Kunz, T.H. (ed.) 1988. Ecological and Behavioral Methods for the Study of Bats. Smithsonian Institution Press, Washington D.C.
- Wilson, D.E., F.R. Cole, J.D. Nicholds, R. Rudran, and M.S. Foster (eds.). 1996. Measuring and Monitoring Biological Diversity – Standard Methods for Mammals. Smithsonian Institution Press. Washington, D.C.

BIRDS: JEFF COOPER

- [Care and use guide for birds](#)
- [Publications on banding](#)
- Bibby, C.J., N.D. Burgess, and D.A. Hill. 1992. Bird Census Techniques. Academic Press, New York.
- Bub, Hans. 1991. Bird Trapping and Bird Banding, a Handbook for Trapping Methods All Over the World. Cornell Univ. Press, Ithaca, NY.
- Foster, Mercedes S. and P.F. Cannell. 1990. Bird specimens and documentation: Critical data for a critical resource. Condor 92-277-283.

- Winkler, K. 2000. Obtaining, preserving, and preparing bird specimens. Journal of Field Ornithologists Vol. 71, No. 2, pp 250-297.

FISHES: MIKE PINDER

- [Guidelines for the use of fish in research](#)
- [Resource Inventory Committee](#), British Columbia, Canada
- Jenkins, R.E. and N.M. Burkhead. 1993. Freshwater Fishes of Virginia. American Fisheries Society, Bethesda, MD. 1079 pp.
- Kelsch, S. W. and B. Shields. Care and Handling of Sampled Organisms. Pages 121-144 in B. R. Murphy and D. W. Willis, editors. Fisheries Techniques, 2nd Edition. American Fisheries Society, Bethesda, Maryland.

Current Research Programs and Virginia Repositories

Museums

National Museum of Natural History	Birds	Roger Clapp
Science Museum of Western VA	Birds	Bernice Smith
American Museum Of Natural History	Herps	Michael Klemens
Carnegie Museum	Herps	Jack McCoy
National Museum of Natural History	Herps	Richard Zusi
VA Museum of Natural History	Herp/Invert	Richard Hoffman
Virginia Natural Heritage	Herps	Steve Roble
Smithsonian Institution/VMNH	Insects	Arthur Evans
VA Museum of Natural History	Mammals	Nancy Moncrief

Universities

VA Commonwealth University	Birds	Charles Blem
VA Tech	Birds	Jerry Via
Mary Washington College	Fish	Werner Wieland

Roanoke College	Fish	Bob Jenkins
VA Commonwealth University	Fish	Steve McIninch
VA Institute of Marine Science	Fish (Coast)	Jack Musick
Bridgewater College	Herps	Sarah Swank
Emory & Henry University	Herps	Steven Hopp
George Mason University	Herps	Carl Ernst
Liberty University	Herps	Paul Sattler
Mary Washington College	Herps	Werner Wieland
Northern VA Community College	Herps	Ralph Eckerlin
Old Dominion University	Herps	Alan Savitzky
University of Richmond	Herps	Joe Mitchell
VA Commonwealth University	Herps	Charles Blem
Averett College	Insects	Edward Fisher
Hampton University	Insects	Barbara Abrams
Old Dominion University	Inverts	John Holsinger
VA Commonwealth University	Inverts	Anne Wright
VA Tech	Inverts	Dick Neves
Clinch Valley College	Mammals	Phil Shelton
Eastern Mennonite College	Mammals	Claire Mellinger
Northern VA Community College	Mammals	Walter Bulmer
VA Commonwealth University	Mammals	John Pagels
VA Tech	Mammals	Jack Cranford
VA Institute of Marine Science	(Sea)Turtle	Jack Musick